Wright (M. B.)

A

LECTURE

ON THE

Physiological and Therapeutical uses of Water,

DELIVERED TO THE STUDENTS

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LECTURE.

GENTLEMEN :—I AM about to present you some general remarks, upon the Physiological and Therapeutical uses of water.

WHATEVER view may be entertained respecting the vitality of vegitable fluids, it will not be denied, that without a due supply of water, organic life can neither be developed, nor sustained. Deprived of this, the seed would not germinate,—the plant could not extend its branches, or preserve the deep green of its foliage,—there would be no expansion of the bud into the flower,—the fruit would wither and fall immaturely from its stem—the tall oak of the forest which had withstood an hundred tempests, would become sear and dead, and over all the earth, would be presented to the eye of Omnipotence, barrenness and desolation.

WATER, is no less essential for the preservation of animal existence :—Received into the stomach, it fulfils several important Physiological purposes. It is the natural solvent of various articles of food, and in the process of digestion, therefore, it is more or less demanded. In aid of this function, however, the utility of water cannot be estimated, by the amount usually taken in combination with food: In many instances, individuals drink more fluid at their meals, than is conducive to health. It may so far dilute the gastric juice—the material and essential agent in digestion, as to render it incapable of acting upon those substances, with which it is brought but feebly in contact. And again, the stomach is in danger of losing its vital elasticity by over distention. It is important, therefore, that dyspeptics should bear in recollection, that, although water is a useful aid in digestion, it is capable of exerting a pernicious influence when taken in large quantities.

WATER is an indispensible agent in nutrition. To say that animal and vegitable substances are alone capable of furnishing support for the system, would be giving too limited a definition to the nutritive function, inasmuch, as water enters largely, as well into the composition of the solids, as fluids of the body.

Indeed, the amount of the latter, compared with the former, is proportionally large. According to the estimate of Chassieur, the entire frame consists of not less than nine parts of fluids, to one of solids. This experimentalist asserts, that a dead body, weighing one hundred and twenty pounds, may be reduced to one-tenth of this weight, by being dried in a hot oven. Several of the adult mummies, removed from the caveties of Teneriffe, did not weigh over seven pounds. To these examples, exceptions, may be taken, yet, they are sufficiently accurate to answer a general purpose.

Again, water preserves a healthful consistance, and due amount of circulating material, of which the vessels would otherwise be deprived, by the action of the exhalents and secretory organs. It is difficult to ascertain the precise amount of fluid which escapes from the body in health, through the different emunctories, varied, as it is, by exercise and temperature ; we cannot estimate, therefore, the extent of the demand for renewed supplies. Between the absorbents of the stomach, for instance, and the exhalents of the skin, there is a strong sympathy of action, and when perspiration is copious, thirst is increased. So, also, when a large quantity of liquid has been taken into the stomach, and carried into circulation, the perspirable vessels are called upon to eliminate the excess.

We are sometimes astonished, at the large and rapid accumulation of fluid, exhaled into the caveties of the body, under the influence of disease. An old gentleman of my acquaintance, residing in the interior of this State, labored under dropsy of the abdomen. In the short period of one year, over three barrels of serum were drawn from him, by the ordinary process of tapping.

In the form of baths, water was employed at an early period, in the history of the world. During the Patriarchal age, cleansing the body, constituted an item of Christian duty. Jacob commanded his family not to go up to Bethel to offer sacrifice, until their bodies and their garments had been purified. By the Jews, cleanliness of the body, was intimately associated with high moral perception. It was deemed essential, that the external as well as internal man, should be cleansed of all impurity, before officiating in the services of the temple ; and it was conceived, that the proselyte from Heathen to Jewish faith, received with more profit the expositions of the Law during immersion in the river. The believers in the Mahometan creed, in obedience to the injunctions of their prototype, wash portions of their body daily, before repeating each of their Five Prayers. Indeed, baptism in some form is practiced by religious denomi-

nations of our own day, and is viewed as typical of moral purity, if not absolutely necessary for the cleansing of the soul.

The Greeks derived so much enjoyment from bathing, that they were induced to engraft it upon their Epicurean philosophy. Public baths were connected with the Gymnasia, where the athletæ sought repose and invigoration after the fatigue of the sports. But, perhaps no mortal ever enjoyed the bath, as a luxury, more than does the Turk. He enters the magnificent edifice—passes through the preparatory ceremonies of two or three apartments—takes his bath—his limbs are kneeded, rubbed, and stretched—his body is perfumed—he wraps himself in his loose gown, and reclines upon a soft matrass—he drinks his coffee and smokes his pipe, and then he feels as if it were useless to aspire to any more exalted state of existence.

I should regret to see any of my countrymen, imitate the excesses of the Turk, but far better would it be for community, if the tasteful, convenient and commodious bath-house, were substituted for some of our public places of resort. Does the exhausted and aching traveller, or the weary laborer wish for renewed strength? Let him retire to the bath, in imitation of Hercules, whose limbs were invigorated, by being bathed in the warm springs of Thermopylæ. Has sadness taken possession of the feelings? It can be removed, far more effectually, by the bath than the bottle. The Poet who seeks wings for his imagination, or the Orator who would render his intellect expansive and enduring, can invoke with more profit the bath than the bottle. If the commander who is maturing his plans of conquest, will enter the bath, as did the mighty Napoleon, he may behold the Alps before him, and his strong arms embracing all beyond. And, although like that fearless conqueror, he may be chained to some ocean isle, his unhappy fate will not come with the same speed, or certainty, as after a dependence on the bottle.

I will now allude, briefly, to the various forms in which water is employed externally; after which, I shall notice its more immediate application to the treatment of disease.

To the *cold bath*, your attention is first directed: As a primary effect, this produces a violent shock of the system, and a diminished action of all its functions. If the immersion is of short duration, reaction, as its secondary effect soon occurs. The blood regains an equal distribution—heat is restored to the surface—the pulse beats strong, and the entire man exhibits new energy. But if employed upon those who have became debilitated by disease, or who are constitutionally enfeebled, heathful reaction may not succeed.

The popular view of the cold bath, differs from this. It is used to impart strength and elasticity to the feeble frame. Even helpless infants are brought under its influence. "*It makes them hardy*," is the nursery expression. But it is an expression which may prove even more injurious, than it seems to be destitute of distinct signification. Spartan mothers employed the bath, and the mothers of the present generation follow their example with a view to make Spartan sons. To establish the fact, that, it is an absurd and destructive practice, we need only look at the depressing influence of cold, and the known laws of vital reaction. In every day life, we have presented to us, a wide difference between the effects of the same cause upon different individuals. Look at the two brothers who have been subjected to the same parental treatment. They are on their way to school. The one is clothed in thick woollen garments—his feet are well protected, and yet he is shivering and crying with the cold. The other exposes his breast to the north wind—pulls off his shoes and stockings—wades through the snow, and slides upon the ice barefoot, and he is a whistling, merry fellow. In what resides the difference of their power to resist? In the original constitution. In the one case, vitality is not sufficiently active and powerful to withstand the chilling agency of the cold. In the other, reaction is speedy, for there is less nervous impressibility, and more energy of function.

Custom, no doubt, cautiously regulated, adds to the system new powers of resistance. In verification of this, many examples might be enumerated, one of which I will not overlook.

For many years, an old gentleman has resided upon the bank of the Scioto river. He dwelt with the Indians at an early day—became subject to their exposures, and still retains some of their peculiarities. Wading or swimming in the river is, with him, a cure for most diseases. And a characteristic incident is related of him, in another particular. Soon after marriage, he concluded to range the woods, in pursuit of deer, a sport in which he was by no means deficient. It was severely cold, and a deep snow had fallen upon the ground. After his hunting apparatus had been put in order, and when he was about to take leave of his bride, she observed that he was without stockings, and, fearful that such exposure might prove injurious, insisted upon supplying him with a pair. He was not accustomed to their use, but put them on, as he was not disposed to resist an endearing solicitation at this happy period of his life. He had not travelled far, however, before his feet became unusually cold. To the stockings was ascribed, at once, all the mischief,

and they were removed, and stowed away in his pocket, to be returned to the kind donor. From that day to the present, a pair of stockings, has formed no part of that gentleman's wardrobe.

To a certain extent, *cold*, when applied to the body is a relative agent. A temperature that would be to one, intensely cold might be comparatively warm to another, owing to different states of the atmosphere to which they had been previously exposed, and to a difference of constitution. To embrace most cases, it has been deemed proper, to give the cold bath a range between 50° and 70° of Fahrenheit.

The medium temperature of the *tepid bath* is ninety degrees, and it feels more or less warm, according as the body is depressed below, or elevated above this point.

The *warm bath* may be placed between 95° and 98° of Fahrenheit. This, and the preceding are to be prefered for family purposes. They agree with most persons—the body can be the most effectually cleansed—and they are more useful for the preservation of health. Beneficial as they are, however, how few are supplied with the means of using them properly. There is a great deficiency in this respect, even among those dwellings, which have been erected with a view to comfort and health. Those families who have been in the daily employment of the bath, would not exchange the means of using it, for any other house-hold arrangement. Parents have remarked to me repeatedly, that the daily use of the bath, had given rosy, vigorous health to those children, who, were formerly, puny and sickly. I know of nothing which operates more strongly, and at the same time more agreeably, to prevent the summer complaints of children, than cleanliness, and a natural action of the skin.

The *hot bath*, is above the natural temperature of the body. In its effects, it is decidedly stimulating—the heart beats with more energy—an increased impetus is given to the circulation—respiration is accelerated—the skin becomes red, and perspiration copious. In some instances, there is produced a strong determination of blood to the head, with throbbing of the vessels, and a tendency to apoplexy. In consequence of this, it is employed more frequently as a local, than general remedy, and as such can be adapted to a greater variety of purposes.

Vapor baths, were extensively used by the ancients for hygienic purposes. At one period, they were more numerous in Paris and London, than are other baths at the present time. Subsequently, by changes of fashion, they were doomed to almost entire neglect. The return of Napoleon's army from Russia,

was followed by their re-establishment in France. In our country a prejudice exists against warm bathing, in any form, during cold weather. The belief is, that the warmth, renders an individual more liable to contract cold. But, no such fears exist, or effects are produced in Russia, where none other than the vapour bath is used as a hygienic and curative agent. In some countries the vapour bath has been used for ages and still maintains the most conspicuous rank as a detergent. The secretion of the skin, and the impure substances which adhere to it are more easily detached, and the subsequent friction removes them more perfectly, than when liquid baths are resorted to.

Affusion is another mode in which water is used. This term signifies the pouring of water at different temperatures, upon the whole or any part of the body. The effect of affusion, varies with the temperature of the liquid, and the amount of mechanical impulse connected with its use. The greater the height from which the water is made to fall, the more powerful will be the impression. The cold affusion, if continued for any length of time, occasions a reduction of temperature and vital action. As ordinarily applied, its first effects are more transient than those of the cold bath, and, if the system has sympathized in the local impression, there is general reaction, with sweating, and a tendency to sleep. It is useful to produce a strong impression upon the nervous system, and to interrupt diseases therein seated.

The *cool affusion*, like the cool bath, is used in those cases in which a weak condition of the system forbids a more reduced temperature.

The *tepid affusion* is safer still, being less powerful in its action. On account of its mildness, it is especially adapted to the treatment of infantile diseases.

The *warm affusion* is less advantageous, perhaps, than the former, yet, it gives rise to agreeable sensations, and favors temporary repose. Its employment is not free from objection, inasmuch as it is sometimes followed by chilliness and pulmonary determinations.

The *spout-bath*, or *douche*, as it is termed by the French, is comparatively of recent origin. A stream of water directed upon any part of the body, constitutes the douche. The character and amount of its effects will depend upon several circumstances connected with its application.

The *vapor douche* is a feeble agent, as it contains but little heat, although in some cases, as when directed into the ear, it is not without benefit. *Steam*, on the contrary, produces powerful and lasting effects. In local diseases, it is resorted to as a substitute for ordinary caustic, and, from the deep eschar which

it occasions, we may well ascribe to it counter-irritant properties. The pain which it excites, and the inconstancy of its action, have been advanced as objections to its use, if other more manageable remedies are at hand. As an escharotic it is preferable to boiling water inasmuch as its action upon the surface can be more readily localized.

By means of the *liquid douche*, very powerful impressions may be experienced, especially when heat is conjoined with mechanical force. Hot water is more immediate in its action than cold, and while the long continuance of the first produces inflammation, the latter acts as a sedative. The latter, however, by a more brief application, is followed by strong reaction, and may be found beneficial in a great variety of chronic affections. Its use may be accompanied not only by severe local pain, but by an extended influence over the system. If the water have a fall of several feet the percussion will be painfully severe. Directed to the head, nothing is more effectual in quieting the ravings of the maniac. The mere dread of its application will sometimes be sufficient to master the mental excitement.

Boiling water is esteemed useful as a blistering agent. In cases of great emergency, or where the ordinary blistering ointment is not at hand, we may derive advantage from this active agent. It is mostly resorted to, however, with a view to detach the cuticle preparatory to the endermic application of remedies.

I will now direct your attention to some of those diseases in which water is beneficial, and to an occasional remark respecting its application.

In the treatment of Intermittent Fever, the cold bath is recommended as an assistant to, and even as a substitute for, the active tonics. It is true, that both are beneficial, but their employment should be under different conditions of the system, and to fulfil different indications. An Intermittent not unfrequently presents itself, in which the paroxysm passes through its regular stages of chill, heat and sweat, without terminating in quietude. The pulse remains partially excited—the skin is preternaturally hot—there is pain in the head, and aching of the limbs—thirst and impaired appetite—restlessness of body, and fretfulness of mind. In these cases, the morbid impression is confined, mostly to the nervous system, and upon which when thus excited, the cold bath exerts a salutary influence. Bark on the other hand would be injurious, and both would be inadmissible if the viscera were strongly implicated. During the hot stage, cold water to the surface soothes the feelings, and

moderates excitement. It diminishes the accelerated pulse—the extreme heat—the hurried and laborious breathing—the delirium and restlessness—and it is the most efficient substitute for the lancet.

An attack has been made upon the chill of ague by means of the warm bath, and those who have had experience with it in this particular, allege that in some cases sweating has followed reaction so speedily as to have taken entire possession of the hot stage.

The efficacy of *sponging* the body with cold water, in the more *continued fevers*, is attested by universal experience. How speedily it softens and cools the skin. How it quiets inordinate action; and when all other means fail, how it produces tranquil and refreshing sleep. Not only while the disease is in its more incipient stage, will water in this form produce benefit, but when actual debility supervenes, attended with a hot and dry skin. At this period however, tepid instead of cold water, is in most instances the safest application.

In fever of irregular action, in which there is no apparent congestion or inflammation, cold affusion has been singularly beneficial. If the remedy does not effect an immediate cure, reaction brings with it a true developement of the disease; or, the morbid sympathies are interrupted to such an extent, as to render other means available.

To say that cold water, in the form of affusion, was useful in *scarlet fever*, would be merely reiterating the sentiments of many conspicuous medical authorities. Yet I am satisfied that some qualification is needed in advocating this practice. If the disease be mostly cutaneous, cold affusion may be used with comparative safety; but, if the mucous tissues become strongly involved, I should deliberate much before venturing upon this remedy. Internal congestion, and a fatal depression of the vital powers are to be apprehended, especially in an advanced stage of the disease. I can speak with more confidence in behalf of ablution with tepid water, repeated so as to keep up a constant evaporation from the surface.

To reconcile the Profession to the use of the cold bath, in *eruptive diseases*, would be no easy task. Popular prejudice has always embraced a stimulating practice, and professional etiquette has favored its continuance. We are not wanting in recommendations, however, from the wise and experienced in the profession, in favor of cold affusion and ablution, in those cases ushered in by a hot and highly irritated skin. Whatever practice it may be your pleasure to adopt, you must bear in recollection the fact, that an extreme degree of cutaneous ex-

citement is unfavorable for the appearance or full developement of the eruption.

On the other hand, if, upon the approach of an eruptive disease, the surface be cool, or the temperature unequally diffused; immersion of the body or extremities in the warm bath, is one of the means to which we should first resort. It restores the equilibrium of the circulation—facilitates the eruptive process, and it renders the fever more manageable. During the progress of the disease, a tendency to immoderate fever can be lessened, by sponging the body with warm or tepid water. The vapor bath acts efficiently in removing the dry and scaly condition of the skin, at the close of eruptive diseases.

In the treatment of local *inflammation*, cold and warm fluids have been alike advocated and condemned. At times, it is difficult to determine which is most beneficial. And again, during the continuance of the same disease, their alternate application seems to be necessary to maintain a given impression. This is more particularly exemplified in some forms of opthalmia. Consequently, we cannot establish a rule in this particular, from which the practitioner shall not depart. The feelings of the patient will serve as the best criterion by which to judge of the utility of the remedy. In the Purulent Opthalmia of children, so prevalent in asylums, frequent washing of the eye with warm fluid is highly useful, not only with a view to cleanliness, but to prevent the secretion from becoming hard, and agglutinating the lids.

For the arrestation of *hemorrhage*, cold is a powerful remedy. If it proceed from the nose, common experience at once directs the application of ice, or some cold substance, to the back of the neck, or to the bleeding surface. And when it arises from over distension, or slight injury of the minute vessels ramifying upon the Schniderian Membrane, the cold, thus applied, may be successful. But if the bleeding be connected with, or dependant upon, visceral obstruction, other remedies must take the lead in the cure. Occasionally, do we meet with cases of fever, which are ushered in by *hemorrhage* from the nose, and in these cases, also, the cold is of secondary importance.

There is some discrepancy of opinion respecting the usefulness of cold water applied to the chest, in *hemorrhage from the lungs*. We are told by some that they have given it a full and candid trial, and that it is not only an efficient aid to the lancet but that as a substitute for that great remedy, it is entitled to confidence.

A slight *hemorrhage* may be arrested, by putting the extremities into cold water, but if danger threaten, the cold should be

applied directly to the chest, by means of ice or cloths dipped in cold water. Immersion of the whole body has been practised. Used in whatever form, the impression should be sufficiently sedative to prevent speedy reaction.

To arrest *hemorrhage* from other internal organs, cold water is no less efficacious. In that form of *hemorhage* which it may be your painful duty to encounter, at one of the most anxious and critical periods of female existence, is the application of cold more especially demanded. No other local remedy can bear a comparison with it in promptness, and permanency of effect. Cold water should be applied to the loins and abdomen, and in the more alarming cases, it may be *poured* upon the uterine region, in such a stream, and from such a height, as will secure a sudden and strong impression. The former mode is most acceptable, and will generally succeed.

Diseases of the *Pulmonary* tissue, especially those of a chronic character, are relieved by an occasional use of the warm bath. Even the hectic of gnawing consumption has yielded much of its formidable character to a judicious use of this remedy.

In the treatment of *Croup*, the warm bath is advocated as an essential remedy, and is among the first to which the physician, as well as the mother, usually resorts. The testimony in its behalf is of such a character, and has gone to such an extent, that it would appear presumptive in me to gainsay it, in any particular. Still, if I were to become an advocate for this remedy, I should cease to follow the dictates of my own experience. In most of the cases which have fallen under my observation, the difficulty of breathing and hoarseness of voice, have been increased soon after a removal from the bath, if not during the immersion. How far the practice of retaining the child in the bath two or three hours at a time, as has been recommended, might afford relief, I am not prepared to determine. With my present views, however, I should greatly prefer the constant application of hot cloths or sponges to the throat and chest, than the general bath in any form or continued for any length of time. Applied in this manner, the heat is more direct in its action—it can be continued longer, and there is a more uniform impression, than when the general bath is used.

The foregoing remarks are intended to apply to *inflammatory* Croup, rather than to the *spasmodic* variety. Fortunately, the latter is by far the most common, and is easily removed by those remedies which relax the system and equalize the circulation. The warm bath subserves this purpose, and especially will good result from its use, if united with those remedies which remove irritating substances from the stomach and intestinal canal.

In all cases in which there is an undue determination of blood to the brain, you will find the application of cold water to the head prove advantageous. If you observe the extremities cold, at the same time, the warm foot-bath should be called to its aid. In adults, where an immediate and strong effect is desired, the water should be *poured* upon the head. It may be directed to the head of children by squeezing it from a sponge. In many cases, simple ablution will answer every purpose. Ice is employed most conveniently and agreeably, by being pounded and enclosed in a bladder. It can be placed on the head of the patient, or the head can be laid upon it.

Between the skin and the tissues of the joints, there is a close sympathetic relation. In the acute pain of rheumatism, great advantage is derived from the warm bath, and chronic cases of an obstinate character have been cured by the conjoined use of warm bathing and friction. In some instances, the *vapor* has been found more efficacious than the liquid bath.

In inflammation of the joints from *sprains*, cold affusion is among the most useful of remedies. The intensity of heat and pain will indicate the proper degree of coldness in the water. If stiffness remain after the active disease has been removed, a systematic use of the warm or hot douche, will result in relaxation and mobility of the joint.

The old and almost forgotten practice of counteracting the deleterious effects of *narcotics*, by means of cold water, has been of late years revived. I will offer you but one case, as testimony in its behalf. About four or five o'clock in an afternoon, I was called to see a man who had taken a large quantity of laudanum and whiskey. I found him without one sign of animation, save an obscure breathing. The prospect of reanimation was very distant, but, it was concluded to test the virtue of cold water. A pitcherfull was poured upon his head every few minutes, until daylight the next morning, when sensibility and intelligence were gradually restored.

Fortunately, the action of cold water as an anti-narcotic, is not confined to the restoration of those who may have endeavored to take a suicidal departure from this world, but it is beneficial in cases of more frequent occurrence. The pain and heaviness of the head—the stupor and delirium which often follow the action of opium, are controlled in an astonishing degree by the application of cold water to the head.

Intoxication sometimes renders it difficult to distinguish the man from the brute. They are not so apt to occupy the same stye, as they are to wallow in the same mire. Your curiosity, and perhaps your kind feelings may prompt you to discriminate

between them. You can do so readily by dashing upon them a bucket of cold water. The one, without regard to the loneliness and safety of his companion, will abruptly run away. The other, will gradually raise himself upon his hands and knees—then he will assume the sitting posture—and finally, you will be enabled to discover in spite of filth and stupidity, the outlines of what was once a man. In a word, gentlemen, cold water is not only one of the best preventives of drunkenness, but when poured upon the head or dashed upon the face, it is one of the best means of rousing an individual from this state, to sensibility and thought.

I must not forget to offer you a few thoughts upon some of the *abdominial* diseases.

Some years ago I attended a patient laboring under *Cholera Morbus*. I administered most of the usual remedies, but without affording any relief, and to all appearance death was rapidly approaching. While the man could speak, he implored me to cut him open and fill his stomach with ice ; so great—so intolerable was the heat of that organ. Of course, I did not comply with his request, but I adopted a practice as near in conformity with it as possible. I administered cold water by injection, and poured it from a considerable height upon the region of the stomach. He was then wiped dry, and wrapped in a blanket. This process was repeated three or four times, at short intervals. Reaction became more and more perfect from the first application of the remedy, and in a short time I had the pleasure of seeing my patient relieved of every unpleasant feeling, except weakness. Subsequently, I have resorted to the same plan, under similar circumstances, and with results highly satisfactory.

In *Spasmodic Cholic*, the natural peristaltic action of the intestines is suspended. To relieve this difficulty, it is customary to employ cathartics ; and to facilitate their action, by overcoming the morbid condition of the muscular fibres, opiates are sometimes prescribed. This practice is useful, particularly at an early stage of the disease; but I am satisfied that a repetition of cathartics can do no good in these cases, and may result in immense injury. Nothing is more unpleasant than to reflect, that disease has been aggravated and prolonged by improper treatment, and to avoid this, you must use cathartics with a sparing hand in Spasmodic Cholic. In this disease, a repetition of stimulating injections will prove no less deceitful. In verification of my remarks, I might dispense with my own experience, and rely upon the statements of any candid, practical Physician.

You may wish to know, what remedy I deem of paramount utility in such cases. I can only say, that in most instances in

which I have used occasional injections of cold water, my most ardent wishes have been fulfilled. Irritation and spasm of the intestines have been subdued, and ample evacutions have been produced.

Some of you will recollect a patient, who was admitted into the Commercial Hospital during last summer. A history of the case can be given in a few words:

A few weeks previous to the admission of the patient before us, he was seized with a painful affection of the bowels, which was supposed by his physician to be *intussusception*. For this he took a variety of remedies, and from which state he was, greatly relieved. Again his bowels became constipated, to overcome which he took a dose of Salts and Senna. This prescription instead of operating as a cathartic, tended only to an increase of pain. He continued in this state up to his entrance into the Hospital—a period of six days. At the latter period, he had in addition, frequent vomiting, with an ungovernable disposition to lay upon the abdomen. A powder was given him, by the resident physician, every four hours, consisting of Calomel and Morphine, together with an enema of Castor oil and Spirits of Turpentine. The next day, July 25, on visiting the Hospital, my attention was directed to the case. The pain and vomiting had abated slightly under the use of the powder, but the bowels had not been moved. I directed injections of cold water to be given every few hours, with mucilaginous drinks, and that all other remedies be withheld.

26th—Two operations from the bowels—symptoms relieved.

27th—Discharges continue—vomiting has ceased, and pain is lessened. Continue treatment, and add three Assafœtida Pills daily.

28th—Evacuations more frequent and copious—less pain still.

30th—No pain—slight tenderness on pressure—bowels open. Omit injections—continue Assafœtida, and mucilaginous drink—use thin farinaceous diet.

August 6th—Discharged—cured.

Ileus, is esteemed by some writers, an aggravated form of Spasmodic Cholic. This is not the place, nor is it my province to enquire into its pathological character. In the treatment of this affection, two prominent objects are kept in view, viz: relaxation of spasm, and the evacuation of the intestines. To accomplish the former, bleeding and opiates are employed—laxatives and injections to produce the latter. Indeed, a great variety of remedies have been recommended to secure the above objects. We are told, that dashing cold water upon the abdomen and extremities, has facilitated the action of cathartics in such cases,

and thus has produced benefit.

But to the treatment in a more advanced stage of the disease, I wish to direct your attention.

We are not apt to call the disease of our patient *Ileus*, until it is accompanied by vomiting of the offensive contents of the intestines. When this stage arrives, and the vomiting is frequent, you need not expect to do much by internal remedies. A case of this kind fell into my hands after several hours continuance. I found the patient prostrate—in great distress and vomiting excrementitious matter, together with soap injections, which had been administered a short time previous. Learning that all the medicines which had been taken, had been immediately rejected, there was no inducement to continue the use of internal remedies. Consequently, I prohibited every thing from being swallowed, and relied upon the application of a blister to the abdomen. As inflammation and vesication commenced, the vomiting gradually ceased—the intestines resumed their regular peristaltic action, and recovery was speedy and perfect. I do not know that any impression from cold water would have been alike beneficial, but from its control over irregular actions of the intestines somewhat similar, I am induced to say to you, that if you should ever be so unfortunate as to attend a case of *Ileus*, try this remedy. Let the water be as cold as it can be procured—apply it in a stream, and give it a fall of several feet.

Contusions and *Wounds* are of constant occurrence, and their cure is often prolonged by improper treatment. The former of these injuries are most frequent among children, and the remedy to which mothers most frequently resort is Camphor, or a like stimulant. To the delicate skin of children, such articles are irritating ; and therefore less agreeable to the feelings than cold water ; nor are their curative effects equal to the latter. The pain, swelling, discoloration and inflammation, are prevented or relieved by nothing more readily, than by keeping the bruised part moistened by this simple remedy.

For the cure of *Wounds*, water dressings were employed at a very early period of time ; but amidst the changes of fashion they fell into neglect. Subsequently, important and distinguished cures have given them a more enduring reputation. The Military Surgeons of France, employ water extensively in the treatment of lacerated wounds ; warm or cold, as one or the other may be most strongly demanded. Larrey has relieved the agony of many a wounded soldier, by the constant application of water from the Nile.

Liston has carried his water dressings further than most other Surgeons. He directs that the stump of an amputated limb be

dressed with lint saturated with cold water, for seven or eight hours previous to the more permanent dressings. He contends that it moderates the sensibility of the parts—checks the oozing from the wounded vessels, and facilitates the healing process.

A case has been recently reported by one of the Surgeons of the United States' Navy, in which it became necessary to amputate the arm above the elbow. On the following day, tumefaction and heat were observed in the stump as high as the shoulder, and it was seized with violent spasms. These symptoms were soon subdued by cold water dressings, and the operation terminated favorably.

While one advocates hot applications to *burns* and *scalds*, another is equally extravagant in his praises of cold. I may make the general remark, that if the injury be extensive, cold water will be inadmissible, but if only a small extent of surface be abraded, the cold water will act advantageously. Small, every-day burns, may be speedily cured, by binding upon them lint or cotton, saturated with this fluid.

When your object is to preserve moisture in your dressings, they should be covered with oiled silk, or thin sheets of gum-elastic. This practice is particularly necessary to prevent the escape of heat from the warm water dressings. By such a covering, poultices will retain their soothing property much longer, than in the manner in which they are usually applied. I may remark here, that poultices have been laid aside for years in some of the European hospitals, and cotton or lint wet in warm water and covered with the articles above specified, have been selected as a substitute. It is declared, that there is great advantage in the latter mode—that heat and moisture are better preserved—the dressings more conveniently applied and removed, and that they are not so apt to injure sensitive parts, by their weight.

Those students who are not of the opinion now, will undoubtedly, before the present hospital term expires be convinced that there is exceeding great diffiulty in curing those perennial flowers, denominated "*old ulcers.*" They are most frequently seated upon the lower limbs, and although they are very often connected with broken-down constitutions, they are in many cases the result of neglected and badly treated injuries. But these ulcers are not confined to hospitals. They are common throughout community. Pause for a moment as you pass along the side-walks of our city, and presently you will observe an individual standing or hopping on one leg. Ask him what is the matter ? and he will tell you, with a most rueful countenance, that he has hurt his sore shin.

Ulcers of long standing, have been benefitted by the united application of cold water and bandages. Be careful when you adopt this treatment, that you do not draw your bandages so tight as to produce absorption of new formed granulations. If the water-dressings be used three or four times a day to a surface recently abraded, inflammation will be prevented, and to the sore will be imparted an immediate disposition to heal. If inflammation shall have extended already to the surrounding surface, slight scarifications of the skin, by emptying the distended vessels will add to the curative effect.

Among the many remedies recommended for the cure of *Tenia Capitis*, (*scald head*) is the *steam* of hot water—the diseased part to be subjected to its action one hour daily. I cannot speak of this process from experience, but from my knowledge of the disease, I do not hesitate to give it the voice of approbation. After all, the grand secret in the cure of this unseemly and annoying affection is cleanliness, perfect cleanliness. It, may cureof itself, and no article will succeed without it. In affecting this object, nothing will aid us more than the steam. But, a large quantity of morbid secretion gathers upon the sore, and soon becomes so hard as to be impenetrable to most remedies. The oiled silk will obviate this to a considerable extent, by preventing the evaporation of the liquid part of the secretion. If, therefore, you should be inclined to test the usefulness of the steam in this disease, let me recommend you to cover the head with the oiled silk also, *

Many times the Surgeon is prevented from adjusting permanently, a *fractured bone*, on account of the swelling and tenderness of the soft parts around the place of fracture. By surrounding the limb with lint, wet in cold water, a few times during the day, the injured parts will become soothed—swelling will subside, and your apparatus for fracture can be speedily applied.

It not unfrequently becomes necessary to adopt some relaxing treatment, previous to an attempt at reducing a *dislocated joint.*

To produce this relaxation, your patient may be placed in a warm bath, and kept there until he becomes weak, and perhaps disposed to faint. To assist the bath in producing such an effect in the robust, and those whose muscles are rigid, nauseants and bleeding are serviceable, and are often demanded. The remark to which I wish to direct your attention especially in these cases is, that you will derive advantage by not bleeding your patient

* Note:—A very simple mode of preparing oiled silk for every day-practice has been recommended. It consists in stretching a piece of silk, new, or from an old dress, over a frame, and brushing it lightly with well boiled painter's oil.

until he has been removed from the bath—until you have made considerable effort at reduction, and until the system, under your manipulations, begins to react. I cannot stop to assign to you reasons for delaying the bleeding until this period, but I assure you that in dislocations of long standing, there is utility in an observance of the rule.

Cold water was employed as a drink in fevers, as far back as the days of Hippocrates. Celsus, Galen, and other ancient and high authorities are strong in their commendations respecting the use of this fluid. In health it is man's natural beverage, and in disease it is alike demanded. Of late years the profession, (or at least many of its members,) have united in an unjust and cruel crusade against the use of cold water in fever. And why this unmeasured prohibition? To me it seems to have grown out of the immoderate and indiscriminate use of Calomel. Reflection could never have had any thing to do with it. A Physician (so called) takes his place by the side of his patient—feels his pulse, and assumes to look wise, but being ignorant, or too indolent to make himself fully acquainted with the disease, and the true indications of cure, administers his large dose of Calomel, and forbids the use of cold water. The disease progresses—the remedy is repeated, and the same prohibition is expressed. Thus does the patient pass through a long and distressing fever—much longer and much more distressing than if a different course had been pursued. In some cases of fever the most intolerable symptom is thirst, and the practice that would interdict the use of cold water to cool the parched tongue, manifests a stubbornness and want of reflection, that should not receive countenance in this enlightened age of our profession.

I do not advocate the use of ice or cold water in fever simply to allay thirst, but to control morbid excitement. Such is their prominent effect, whether internally or externally used. Every man who has been prostrated by fever, and who has employed ice or cold water freely, can recal the abatement of symptoms, and the delightful sensations which were experienced. No one can have a knowledge of these things, and not become an advocate for these remedies. And what Physician can refuse to practice upon the suggestions which are thus, in so many instances most prominently presented.

Is there any inconsistency in the conjoined use of Calomel and cold water? is a question of some importance. I ask emphatically, are the two remedies incompatible? To answer this question satisfactorily, it is only necessary to bear in recollection the sedative influence of cold, and the state of the system most favorable for the action of Calomel.

Is the latter given as a cathartic? Every practitioner will tell you, that high excitement is unfavorable to the ready and beneficial operation of this class of remedies. Calomel admits of no exception to this rule. Cold water then, by allaying excessive action, is useful in facilitating the operation of Calomel as a cathartic.

Is it given to produce its specific impression by absorption? Your wishes will not be gratified while the absorbing surfaces are unduly excited, and the heart is giving a strong impetus to the circulation. These states must be modified to derive full advantage from the Calomel, and ice and cold water are among the most active agents for this purpose. That Calomel will act more effectually while the organs of the body are in calm and even feeble exercise, than when morbidly and painfully excited, will not admit of doubt. And we need not advance arguments in favor of that which no one pretends to deny. I say, therefore, that Calomel and cold water are entirely compatible—that the influence of the one prepares the way for the salutary action of the other.

Does the dread in the use of cold water and Calomel arise from their liability to produce salivation? Aye—It is from this fear that a deep and extended mischief has arisen. It is this which has laid the foundation for an exclusive and abusive administration of Calomel. And gentlemen, unless you and those who are now receiving their medical education, shall think correctly, and act decisively upon this subject, before your professional career shall have an end, you will hear this remedy decried by the thunder-toned voice of public sentiment, and behold it erased from the catalogue of remedies.

Perhaps the first case you will be called upon to treat after engaging in practice, will be one of fever. You may be induced to give a dose of Calomel. The stomach not being prepared for its action, the wished for effect is not realised, and you prescribe it again and again. If, at this time, the thirst of your patient should not be relieved, he will drink water in despite of your caution, and salivation will be very liable to ensue. Then will come the complaint on the part of the patient, and censure on the part of the physician. Now, gentlemen, under such circumstances, upon whom should properly rest the blame? upon the patient or the attendant? It is probable that in such a case, cold water would contribute to the ptyalism; and it is probable too, that without the water, no other effect would be produced than an increase of the morbid state already existing. And to my mind, another thing is very certain. If the water were allowed at a more early period, the stomach would be prepared

for the reception of the Calomel, a comparatively small quantity would act strongly, and soreness of the gums would be avoided. If a small dose of Calomel combined with the use of cold water, will produce as powerful an effect as a large dose without it, is not the former to be prefered? No man can hesitate to adopt that plan which will secure the good and avoid the evil.

In a word, I contend that when aided by cold water, a less quantity of Mercury will be required for all needful purposes, than without such aid; and that if the indications of cure be properly regarded, there will be less danger of producing those effects from which all desire to escape. If the treatment of fever should be narrowed down to the simple question, whether cold water or Calomel should be rejected? I should assent to the rejection of the latter. But no such necessity exists. The two remedies will work together, not only harmoniously, but with increased power and efficiency.

In some instances, either from a natural or acquired susceptibility to the action of Calomel, salivation is readily produced. If it should occur with such individuals, charge it not to cold water. It will follow the use of warm drink just as readily.

It is contended by some, that large doses of Calomel are preferable on every account to small. But if such a doctrine be true in reference to this, it will be applicable to every other therapeutic agent; and all our views respecting the doses of medicines are visionary. But can any one be so wild as to declare, that a large dose of Hydrocyanic Acid will prove more safe and effectual than a small dose?

It is a fact as well established in my mind as any other, respecting the operation of medicine, that ten or fifteen grains of Mercury will operate more beneficially as a cathartic, and display more *curative* power over the functions of the system, than ten times this amount.

And again, diseases of the most loathsome character, are cured in a few days, by the administration of small doses of Calomel once or twice a day, while the aggregate amount given at once, would produce no such happy result. There is this difference between the action of the large and small dose, the one overpowers the system, while the other subdues disease.

I would not utter one word, calculated to prejudice your minds against the use of Calomel. The man who has employed it judiciously, cannot turn his back upon its advantages. It is a powerful remedy, and on this account are we required not to bring it into discredit by abuse. I have not time, nor is this a suitable occasion, to enter at large upon the employment of this remedy. This I shall do at the proper time.

It is not only the action of Mercury which is benefited by the introduction of ice or cold water into the system, but that of other remedies of vast importance. It will be my duty to instruct you, at another period, that in certain conditions of the stomach, or in certain states of the system, emetics must be administered with great caution. At this time, I cannot particularise. But I may present the general remark, that in a high febrile state of the system, emetics do not produce their wonted effect. In giving Tartar Emetic, for example, you will find it advantageous to give such doses as will lessen the pulse, before exciting full emesis. With the same view you may precribe cold water. Under a state of excitement, a small dose of Antimony will operate more favorably, when given in a large quantity of cold water, than a large dose, when dissolved in a small quantityof warm.

Do you ask, if I would lay aside the caution not to give cold drinks during vomiting, and for a time thereafter ? I answer, no. When vomiting has been produced, there is the same danger of producing irregular action of the bowels, by the use of cold drinks, as if the medicine had been administered in warm liquid. The cold fluid lessens the morbid action of the stomach, and imparts to it an ability, if I may use the expression, to engage in vomiting as a healthful process. When this is effected, the cold water has fulfiled its object. Reaction, will again justify its use.

Thus, gentlemen, I have given you a brief outline of the uses of water, as connected with the well-being of the animal economy. And in conclusion, I may be allowed to caution you against falling into the error of rejecting substances because of our familiarity with them, and of grasping at others, whose character and operations are less defined. When new medicines are introduced to the notice of the profession, for which are claimed peculiar and valuable properties, a kind of enchantment is thrown around them, and for a time, every other object vanishes. In this, the judgment is greatly at fault, and when unrestrained, may lead to injurious results.

It is the pleasure and the duty of an enlightened man, to seek after hidden things, and to subject them to the practical operations of life. But before he attempts to unravel the mysteries of nature, he looks at her in her simple attire, and into all her undisguised arrangements. And to pursue a similar course, will be found most safe and advantageous for the Medical Student. His mind should not repose in satisfaction upon any one object. He should learn the elements and the compounds—the features of a common, as well as a rare disease. Constitutions differ in

their original caste, and they possess different degrees of susceptibility. A medicine that is agreeable to one, is disgusting to another. A prescription which is beneficial to-day, may be hurtful to-morrow.

By many, these things are overlooked, and they become advocates for a Materia Medica, exceedingly limited. For convenience, and in aid of the memory, writers upon Materia Medica, arrange several articles under one Therapeutic head. But these articles all differ in their sensible properties, and in the cure of disease, each one exercises an action of its own—closely allied, it is true, but still, distinct. I therefore enjoin upon you, not to reject the old for the new, nor the new for the old, but to permit your enquiries and reflections to embrace them all. The dew in the sequestered vale, hath its own sweetness and influence, as well as the water which gushes, and comes foaming from the sunny hill side. The eager and inquisitive traveller, is not satisfied with sojourning at the retired spring, nor yet with sailing upon the ocean wave, but he ranges over all between. Such, I hope, will be the aspirations of those, constituting the Medical Class now before me.